

CLAIMS

1. A tire production method wherein green tires of a plurality of sizes selected from a group of sizes are produced within a predetermined tact time and under a predetermined production sequence, which includes a sequence phase wherein tire sizes of
5 different rim diameters are produced one after the other;

wherein plural sizes of bead members are stored in a container as being arranged with an order predetermined according to said production sequence, and the bead members are installed into the green tires by removing the bead members from said container according to said order of arrangement, and feeding the removed bead members
10 to the green tire under production.

2. A tire production method wherein green tires of a plurality of sizes selected from a group of sizes are produced under a predetermined production sequence, which includes a sequence phase wherein tire sizes of different rim diameters are produced one after the other;

15 wherein plural sizes of bead members are stored in a container as being arranged with an order predetermined regardless of said production sequence, and the bead members are installed into the green tires by selecting the bead member of a required size and removing it from said container, and feeding the removed bead member to the green tire under production.

20 3. The tire production method according to claim 2, wherein,
upon storage of the bead members into the container, the size of the bead members and the location of the bead members within the container are memorized in association with each other, and,
upon selection of a bead member of a required size, the location of the required bead
25 member is identified based on the memorized information.

4. The tire production method according to claim 2, wherein,
upon storage of the bead members into the container, size information of the bead members are recorded on the respective bead members or on record media corresponding to the respective bead members and stored at the same locations as the respective bead
30 members, and,
upon selection of a bead member of a required size, the size information recorded on the bead members or the record media are successively read in an order of a predetermined arrangement of said locations and checked with the required size, and the location of the required bead member is identified based on check results.

5. A bead member feeding device for use in the tire production method according to claim 1, comprising:

a container yard for mooring, at predetermined locations, an occupied container in which cartridges each mounting a bead member are stacked and stored, and an empty

5 container in which empty cartridges are stored; and

a bead member handling robot for removing bead members from the occupied container;

the bead members mounted on the cartridges stored in the occupied container having respective sizes that are orderly arranged in a vertical direction corresponding to

10 said production sequence; and

said bead member handling robot being adapted to alternately remove the bead members and the cartridges from an upper side of the occupied container, to feed the removed bead members to green tire forming means, and to transfer the removed cartridges to the empty container.

15 6. The bead member feeding device according to claim 5, wherein the cartridges corresponding to the respective bead members are secured with identification code record media for recording identification code, including size information, of the bead members, said device further comprising bead member size determination means for reading the identification code from the record media and checking the size information so read with a

20 size information based on information relating to the production sequence, and said bead member handling robot being adapted to feed the bead members removed from the occupied container to said green tire forming means via said bead member size determination means.

7. The bead member feeding device according to claim 5 or 6, wherein the bead

25 members in said occupied container are arranged so that they are vertically movable with their respective axes aligned with a same vertical line, and said bead member handling robot comprising a bead member clamping hand having a plurality of expandable and retractable chucks, said bead member clamping hand being arranged at a bead member removing position so that the chuck have their respective center lines of expansion /

30 retraction, which are aligned with said vertical line, and designed so that said chucks are expanded or retracted depending upon the size of the bead member determined by said production sequence.